Docket Nos. 01-0525/01-0625
(Consolidated)
ICC Staff Exhibit 1.0

DIRECT TESTIMONY

of

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Financial Analyst
Finance Department
Financial Analysis Division
Illinois Commerce Commission

Request for Approval of Revisions to
Delivery Services Tariffs and for Approval of Delivery
Services Implementation Plan for Residential Customers

Mt. Carmel Public Utility Company

Docket Nos 01-0525/01-0625
(Consolidated)

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WITNESS IDENTIFICATION

Q. Please state your name and business address.

A. My name is Sheena Kight. My business address is 527 East Capitol Avenue, Springfield, Illinois 62701.

Q. By whom are you employed and in what capacity?

A. I am employed by the Illinois Commerce Commission ("Commission") as a Financial Analyst in the Finance Department of the Financial Analysis Division.

Q. Please describe your qualifications and background.

A. In May of 1998, I received a Bachelor of Business degree in Finance and Marketing from Western Illinois University in Macomb, Illinois. I earned a Master of Business Administration degree, with a concentration in Finance, also at Western Illinois University in May 2001. I have been employed by the Commission in my present position since January of 2001.

Q. Please state the purpose of your testimony in this proceeding.

A. The purpose of my testimony and accompanying schedules is to present my analysis of the cost of capital of, and recommend an overall rate of return for, the electric delivery service operations of Mt. Carmel Public Utility Company ("Mt. Carmel" or "the Company").

COST OF CAPITAL

Q. Please summarize your cost of capital findings.

A. The overall cost of capital for Mt. Carmel is 10.75%, as shown on Schedule 1.01.

Q. Why must one determine an overall cost of capital for a public utility?

A. Under the traditional regulatory model, the proper balance of ratepayer and shareholder interests occurs when the Commission authorizes a public utility a rate of return on its rate base equal to its overall cost of capital. If the authorized rate of return on rate base exceeds the overall cost of capital, then ratepayers bear the burden of excessive prices. Conversely, if the authorized rate of return on rate base is lower than the overall cost of capital, then the utility may be unable to raise capital at a reasonable cost. Ultimately, the utility's inability to raise sufficient capital would impair service quality. Therefore, ratepayer interests are served best when the authorized rate of return on rate base equals the overall cost of capital.

In authorizing a rate of return on rate base equal to the overall cost of capital, all costs of service are assumed reasonable and accurately measured. If unreasonable costs continue to be incurred, or if any reasonable cost of service component is measured inaccurately, then the allowed rate of return on rate base will not balance rate payer and investor interests.

Q. Please define the overall cost of capital for a public utility.

A. The overall cost of capital equals the sum of the component costs of the capital structure (i.e., debt, preferred stock, and common equity) after each is weighted by its proportion to total capital. It represents the rate of return the utility needs to earn on its assets to satisfy contractual obligations to, or the market requirements of, its investors.

Cost of Long-term Debt

Q. What is Mt. Carmel's embedded cost of long-term debt?

A. As of December 31, 2000, the embedded cost of long-term debt was 8.5%.

Cost of Common Equity

Q. What is Mt. Carmel's cost of common equity?

A. My analysis indicates that the cost of common equity for Mt. Carmel's delivery service operations ranges from 11.97% to 12.87%, with a midpoint of 12.42%.

Q. How did you measure the investor required rate of return on common equity for Mt. Carmel?

A. I measured the investor required rate of return on common equity for Mt. Carmel with discounted cash flow ("DCF") and risk premium models. Since Mt. Carmel does not have market-traded common stock, DCF and risk premium models cannot be

applied directly to Mt. Carmel; therefore, I applied both models to a sample of integrated electric utility companies.

Sample Selection

Q. How did you select an electric sample?

A. Since this proceeding will set rates for electric delivery services, under ideal circumstances the sample should reflect the risks associated with the provision of those services. Unfortunately, few, if any, market-traded electric utilities in the United States provide only electric delivery services. Therefore, I selected an electric sample based on the following criteria. First, I began with a list of all domestic publicly-traded companies assigned an industry number of 4911 or 4931 (i.e., electric utilities) within *S&P Utility Compustat*. Second, I removed any company which derived less than 70% of its revenue from electric services, based on 2000 data. Third, I removed any company that had a Standard & Poor's ("S&P") debt rating lower than A-. Fourth, I removed any company which had neither Zacks Investment Research ("Zacks") nor Institutional Brokers Estimate System ("IBES") long-term growth rates. Fifth, I removed companies involved in pending significant mergers. The remaining companies, Consolidated Edison, Inc.; FPL Group, Inc.; Idacorp, Inc.; Kansas City Power & Light; Southern Co.; Ameren Corp.; NSTAR; CH Energy Group, Inc.; and American Electric Power, compose my Electric sample.

Q. Please discuss the criteria by which you selected your Electric sample.

A. The percentage of revenues from electric sales is an operating risk measure. The S&P credit ratings measure the risk that a company will default on financial obligations, which is a function of both operating and financial risk.[1] By limiting the sample to companies with a high percentage of revenue from electric sales and high S&P credit ratings, the sample should approach the risk of the electric delivery services operations of Mt. Carmel. In addition, removing companies that have pending significant mergers ensures that merger premiums do not distort the results of my analysis.

DCF Analysis

Q. Please describe DCF analysis.

A. For a utility to attract common equity capital, it must provide a rate of return on common equity sufficient to meet investor requirements. DCF analysis establishes a rate of return directly from investor requirements. A comprehensive analysis of a utility's operating and financial risks becomes unnecessary to implement a DCF analysis since the market price of a utility's stock already embodies the market consensus of those risks.

According to DCF theory, a security price equals the present value of the cash flow investors expect it to generate. Specifically, the market value of common stock equals the cumulative value of the expected stream of future dividends after each is discounted by the investor required rate of return.

[1] Standard & Poor's, *Utilities Rating Service: Financial Statistics, Twelve Months Ended June 30, 1998*, p. 1; Standard & Poor's, *Utilities Rating Service: Industry Commentary*, May 20, 1996, p. 1.

Q. Please describe the DCF model with which you measured the investor required rate of return on common equity.

A. As it applies to common stocks, DCF analysis is generally employed to determine appropriate stock prices given a specified discount rate. Since a DCF model incorporates time-sensitive valuation factors, it must correctly reflect the timing of the dividend payments that stock prices embody. As such, incorporating stock prices that the financial market sets on the basis of quarterly dividend payments into a model that ignores the time value of quarterly cash flows constitutes a misapplication of DCF analysis.

The companies in both samples pay dividends quarterly; therefore, I applied a constant-growth DCF model that measures the annual required rate of return on common equity as follows:

$$k = \frac{\sum_{q=1}^{4} D_{0,q}(1+g)(1+k)^{1-[x+0.25(q-1)]}}{P} + g.$$

where P ≡ the current stock price;

$D_{0,q}$ ≡ the last dividend paid at the end of quarter q, where q = 1 to 4;

k ≡ the cost of common equity;

x ≡ the elapsed time between the stock observation and first dividend payment dates, in years; and

g ≡ the expected dividend growth rate.

That model assumes dividends will grow at a constant rate, and the market value of common stock (i.e., stock price) equals the sum of the discounted value of each dividend.

Q. How did you estimate the growth rate parameter?

A. Determining the market-required rate of return with the DCF methodology requires a growth rate that reflects the expectations of investors. Although the current market price reflects aggregate investor expectations, market-consensus expected growth rates cannot be measured directly. Therefore, I measured market-consensus expected growth indirectly with growth rates forecasted by securities analysts that are disseminated to investors.

IBES and Zacks summarize and publish the earnings growth expectations of financial analysts that the research departments of investment brokerage firms employ. Therefore, I measured market-consensus expected growth with the average of the IBES and Zacks growth rate estimates. Schedule 1.05 presents the analyst growth rate estimates for the companies in the sample.

Q. How did you measure the stock price?

A. A current stock price reflects all information that is available and relevant to the market; thus, it represents the market's assessment of the common stock's current value. I measured each company’s current stock price with its closing market price from May 21, 2001. Those stock prices appear on Schedule 1.02.

Since current stock prices reflect the market's current expectation of the cash flows the securities will produce and the rate at which those cash flows are discounted, an observed change in the market price does not necessarily indicate a change in the required rate of return on common equity. Rather, a price change may reflect investors' re-evaluation of the expected dividend growth rate. In addition, stock prices change with the approach of dividend payment dates. Consequently, when estimating the required return on common equity with the DCF model, one should measure the expected dividend yield and the corresponding expected growth rate concurrently. Using an historical stock price along with current growth expectations or combining an updated stock price with past growth expectations will likely produce an inaccurate estimate of the market-required rate of return on common equity.

Q. Please explain the significance of the column titled "Next Dividend Payment Date" shown on Schedule 1.02.

A. Estimating year-end dividend values requires measuring the length of time between each dividend payment date and the first anniversary of the stock observation date. For the first dividend payment, that length of time is measured from the "Next Dividend Payment Date." Subsequent dividend payments occur in quarterly intervals.

Q. How did you estimate the next four expected quarterly dividends?

A. Most utilities declare and pay the same dividend per share for four consecutive quarters before adjusting the rate. Consequently, I assumed the dividend rate will

adjust during the same quarter it changed during the preceding year. If the utility did not change its dividend during the last year, I assumed the rate would change during the next quarter. The average expected growth rate was applied to the current dividend rate to estimate the expected dividend rate. Schedule 1.02 presents the current quarterly dividends. Schedule 1.03 presents the expected quarterly dividends.

Q. Based on your DCF analysis, what is the estimated required rate of return on common equity for the electric sample?

A. The DCF analysis produced an initial required rate of return on common equity estimate of 11.87% for the electric sample, as shown on Schedule 1.04. Those results represent averages of the DCF estimates for the individual companies in each sample, which are derived from the growth rates presented on Schedule 1.05, the stock price and dividend payment dates presented on Schedule 1.02, and the expected quarterly dividends presented on Schedule 1.03.

Risk Premium Analysis

Q. Please describe the risk premium model.

A. The risk premium model is based on the theory that the market-required rate of return for a given security equals the risk-free rate of return plus a risk premium associated with that security. A risk premium represents the additional return investors expect in exchange for assuming the risk inherent in an investment. Mathematically, a risk premium equals the difference between the expected rate of

return on a risk factor and the risk-free rate. If the risk of a security is measured relative to a portfolio, then multiplying that relative measure of risk and the portfolio's risk premium produces a security-specific risk premium for that risk factor.

The risk premium methodology is consistent with the theory that investors are risk-averse. That is, investors require higher returns to accept greater exposure to risk. Thus, if investors had an opportunity to purchase one of two securities with equal expected returns, they would purchase the security with less risk. Conversely, if investors had an opportunity to purchase one of two securities with equal risk, they would purchase the security with the higher expected return. In equilibrium, two securities with equal quantities of risk have equal required rates of return.

The Capital Asset Pricing Model ("CAPM") is a one-factor risk premium model that mathematically depicts the relationship between risk and return as:

$$R_j = R_f + b_j \times (R_m - R_f)$$

where R_j ≡ the required rate of return for security j;

R_f ≡ the risk-free rate;

R_m ≡ the expected rate of return for the market portfolio; and

b_j ≡ the measure of market risk for security j.

In the CAPM, the risk factor is market risk which is defined as risk that cannot be eliminated through portfolio diversification. To implement the CAPM, one must estimate the risk-free rate of return, the expected rate of return on the market portfolio, and a security or portfolio-specific measure of market risk.

Q. How did you estimate the risk-free rate of return?

A. I examined the suitability of the yields on three-month U.S. Treasury bills and thirty-year U.S. Treasury bonds as estimates of the risk-free rate of return.

Q. Why did you examine the yields on U.S. Treasury bills and bonds as measures of the risk-free rate?

A. The proxy for the nominal risk-free rate should contain no risk premium and reflect similar inflation and real risk-free rate expectations to the security being analyzed through the risk premium methodology.[2] The yields of fixed income securities include premiums for default and interest rate risk. Default risk pertains to the possibility of default on principal or interest payments. Securities of the United States Treasury are virtually free of default risk by virtue of the federal government's fiscal and monetary authority. Interest rate risk pertains to the effect of unexpected interest rate fluctuations on the value of securities.

Since common equity theoretically has an infinite life, its market-required rate of return reflects the inflation and real risk-free rates anticipated to prevail over the long run. U.S. Treasury bonds, the longest term treasury securities, are issued with terms to maturity of thirty years; U.S. Treasury notes are issued with terms to maturity ranging from two to ten years; U.S. Treasury bills are issued with terms to maturity ranging from ninety-one days to one year. Therefore, U.S. Treasury bonds are more likely to incorporate within their yields the inflation and real risk-free rate

[2] Real risk-free rate and inflation expectations comprise the non-risk related portion of a security's rate of return.

expectations that drive, in part, the prices of common stocks than either U.S. Treasury notes or Treasury bills.

However, due to relatively long terms to maturity, U.S. Treasury bond yields also contain an interest rate risk premium that diminishes their usefulness as measures of the risk-free rate. U.S. Treasury bill yields contain a smaller premium for interest rate risk. Thus, in terms of interest rate risk, U.S. Treasury bill yields more accurately measure the risk-free rate.

Q. Given that the inflation and real risk-free rate expectations that are reflected in the yields on U.S. Treasury bonds and the prices of common stocks are similar, does it necessarily follow that the inflation and real risk-free rate expectations that are reflected in the yields on U.S. Treasury bills and the prices of common stocks are dissimilar?

A. No. To the contrary, short and long-term inflation and real risk-free rate expectations, including those that are reflected in the yields on U.S. Treasury bills, U.S. Treasury bonds, and the prices of common stocks, should equal over time. Any other assumption implausibly implies that the real risk-free rate and inflation is expected to systematically and continuously rise or fall.

Although expectations for short and long-term real risk-free rates and inflation should equal over time, in finite time periods, short and long-term expectations may differ. Short-term interest rates tend to be more volatile than long-term interest rates.[3] Consequently, over time U.S. Treasury bill yields are less biased (i.e., more

[3] Fabozzi and Pollack, ed., *The Handbook of Fixed Income Securities*, Fourth Edition, Irwin, p. 789.

accurate) but less reliable (i.e., more volatile) estimators of the long-term risk-free rate than U.S. Treasury bond yields. In comparison, U.S. Treasury bond yields are more biased (i.e., less accurate) but more reliable (i.e., less volatile) estimators of the long-term risk-free rate. Therefore, an estimator of the long-term nominal risk-free rate should not be chosen mechanistically. Rather, the similarity in current short and long-term nominal risk-free rates should be evaluated. If those risk-free rates are similar, then U.S. Treasury bill yields should be used to measure the long-term nominal risk-free rate. If not, some other proxy or combination of proxies should be used.

Q. What are the current yields on three-month U.S. Treasury bills and thirty-year U.S. Treasury bonds?

A. Three-month U.S. Treasury bills are currently yielding 3.70%. Thirty-year U.S. Treasury bond futures are currently yielding 5.65%. Both estimates are derived from quotes for May 21, 2001.[4] Schedule 1.06 presents the published quotes and effective yields.

Q. Of the U.S. Treasury bill and bond yields, which is currently a better proxy for the long-term risk-free rate?

A. In terms of the gross domestic product ("GDP") price index, WEFA forecasts the inflation rate will average 1.8% annually during the 2001-2020 period.[5] In terms of

[4] The Federal Reserve Board, *Federal Reserve Statistical Release: Selected Interest Rates, H.15 Daily Update*, http://www.federalreserve.gov/releases/H15/update/, May 22, 2001.
[5] *U.S. Long-Term Economic Outlook*, WEFA Group, First Quarter 2001, pp. 4.4-4.5.

the consumer price index ("CPI"), the *Survey of Professional Forecasters* ("Survey") forecasts the inflation rate will average 2.6% during the next ten years.[6] In terms of real GDP growth, WEFA forecasts the real risk-free rate will average 3.1% during the 2001-2020 period.[7] The Survey forecasts real GDP growth will average 3.3% during the next ten years.[8, 9] Those forecasts imply a long-term, nominal risk-free rate between 5.0% and 6.0%.[10] Therefore, to the extent inflation and real GDP growth expectations coincide with WEFA and *Survey* forecasts, the U.S. Treasury bond yield more closely approximates the long-term risk-free rate. Therefore, I conclude that the U.S. Treasury bond yield is the better proxy for the long-term risk-free rate currently. It should be noted, however, that the estimate from using the U.S. Treasury bond yield contains an upward bias due to the inclusion of an interest rate risk premium associated with its relatively long term to maturity.

Q. Please explain why the real risk-free rate and the GDP growth rate should be similar.

[6] *Survey of Professional Forecasters*, Federal Reserve Bank of Philadelphia, www.phil.frb.org/files/spf/survq101.html, May 21, 2001. The *Survey* aggregates the forecasts of approximately thirty forecasters.

[7] *U.S. Long-Term Economic Outlook*, WEFA Group, First Quarter 2001, pp. 4.2-4.3.

[8] *Survey of Professional Forecasters*, Federal Reserve Bank of Philadelphia, www.phil.frb.org/files/spf/survq101.html, February 20, 2001.

[9] Historically, the realized interest rate return premium averaged 1.4% during the last 75 years (Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, 2000 Yearbook*, p. 185).

[10] Nominal interest rates are calculated as follows:

$$r = (1 + R) \times (1 + i) - 1.$$

where $r \equiv$ nominal interest rate;
$R \equiv$ real interest rate; and
$i \equiv$ inflation rate.

A. Risk-free securities provide a rate of return sufficient to compensate investors for the time value of money, which is a function of production opportunities, time preferences for consumption, and inflation.[11] The real risk-free rate does not include premiums for inflation; therefore, only production opportunities and consumption preferences affect it. The real GDP growth rate measures output of goods and services without reflecting inflation expectations and, as such, also reflects both production and consumers' consumption preferences. Therefore, both the real GDP growth rate and the real risk-free rate of return should be similar since both are a function of production opportunities and consumption preferences without the effects of risk or inflation premiums.

Q. How was the expected rate of return on the market portfolio estimated?

A. The expected rate of return on the market was estimated by conducting a DCF analysis on the firms composing the S&P 500 Index ("S&P 500"). That analysis used dividends and closing market prices as of March 31, 2001 as reported in the April 2001 edition of *S&P Security Owner's Stock Guide*. Growth rate estimates were obtained from the March 2001 edition of *IBES Monthly Summary Data* and April 1 and 26, 2001 Zack's reports. Firms not paying a dividend as of March 31, 2001, or for which neither IBES nor Zack's growth rates were available were eliminated from the analysis. The resulting company-specific estimates of the expected rate of return on common equity were then weighted using market value data from Salomon Brothers, *Performance and Weights of the S&P 500: First Quarter 2001*. The estimated weighted average expected rate of return for the

[11] Brigham and Houston, Fundamentals of Financial Management, 8th edition.

284 remaining 366 firms, composing 80.01% of the market capitalization of the S&P
285 500, equals 15.52%.

286 **Q. How did you measure market risk on a security-specific basis?**

287 A. Beta measures risk in a portfolio context. When multiplied by the market risk
288 premium, a security's beta produces a market risk premium specific to that security.
289 I used Value Line's beta estimates for the companies in my sample. The Value
290 Line beta for a security is estimated with the following model using an ordinary
291 least-squares technique:[12]

292 $$R_{j,t} = a_j + b_j \times R_{m,t} + e_{j,t}$$

where $R_{j,t}$ ≡ the return on security j in period t;

$R_{m,t}$ ≡ the return on the market portfolio in period t;

a_j ≡ the intercept term for security j;

b_j ≡ beta, the measure of market risk for security j; and

$e_{j,t}$ ≡ the residual term in period t for security j.

293

294 A beta can be calculated for firms with market-traded common stock. Value Line
295 calculates its betas in two steps. First, the returns of each company are regressed
296 against the returns of the New York Stock Exchange Composite Index to estimate a

[12] Statman, Meir, "Betas Compared: Merrill Lynch vs. Value Line", *The Journal of Portfolio Management*, Winter 1981.

raw beta. The regression analysis employs 260 weekly observations of stock return data. Then, an adjusted beta is estimated through the following equation:

$$b_{adjusted} = 0.35 + 0.67 \times b_{raw}.$$

From the individual betas of the companies in each sample a single average beta was computed for each sample to be input into the CAPM.

Q. In past rate cases Staff has calculated its own estimates of beta. Why did you elect to use the Value Line adjusted beta estimates?

A. Unusually high volatility affected a small number of the observations used to calculate beta with the methodology Staff traditionally uses. Although relatively few of the observations were irregular, they were enough to produce an unreasonably low beta estimate. A graphical analysis of betas calculated using the Value Line procedure indicated that the Value Line beta estimates are not adversely affected by outlying observations. Thus, I used the Value Line adjusted beta estimates.

Q. Why do you use an adjusted beta estimate?

A. I use an adjusted beta estimate because empirical tests of the CAPM suggest that the linear relationship between risk, as measured by raw beta, and return is flatter than the CAPM predicts. That is, securities with raw betas less than one tend to realize higher returns than the CAPM predicts. Conversely, securities with raw betas greater than one tend to realize lower returns than the CAPM predicts. Adjusting the raw beta estimate towards the market mean value of 1.0

compensates for the observed flatness in the linear relationship between risk and return.[13] Securities with betas less than one are adjusted upwards thereby increasing the predicted required rate of return towards observed realized rates of return. Conversely, securities with betas greater than one are adjusted downwards thereby decreasing the predicted required rate of return towards observed realized rates of return. The adjustment represents an attempt to estimate a forward-looking beta.

Q. What is the beta estimate for the electric sample?

A. The average Value Line adjusted beta for the Electric sample equals 0.54.

Q. What required rate of return on common equity does the risk premium model estimate for the sample?

A. The risk premium model estimates a required rate of return on common equity of 10.97% for the Electric sample. The computation of those estimates appears on Schedule 1.06.

Cost of Equity Recommendation

Q. Based on your entire analysis, what is your estimate of the required rate of return on the common equity for the Electric sample?

[13] Litzenberger, Ramaswamy and Sosin, "On the CAPM Approach to the Estimation of A Public Utility's Cost of Equity Capital," *Journal of Finance*, May 1980, pp. 375-376.

A. A thorough analysis of the required rate of return on common equity requires both the application of financial models and the analyst's informed judgment. An estimate of the required rate of return on common equity based solely on judgment is inappropriate. Nevertheless, because techniques to measure the required rate of return on common equity necessarily employ proxies for investor expectations, judgment remains necessary to evaluate the results of such analyses. Based on my analysis, in my judgment the investor required rate of return on common equity for the Electric sample ranges from 10.97% to 11.87%, with a midpoint of 11.42%.

Q. Please summarize how you formed the range for the investor required rate of return on common equity for the Electric sample.

A. The low end of the range of my investor required rate of return on common equity, 10.97%, is based on the risk premium-derived results for the Electric sample. The high end, 11.87%, is based on the DCF-derived results for the Electric sample. The models from which the individual company estimates were derived are correctly specified and thus contain no source of bias. Moreover, I am unaware of bias in my proxy for investor expectations.[14] In addition, measurement error has been minimized through the use of a sample, since estimates for a sample as a whole are subject to less measurement error than individual company estimates.

Q. Are any adjustments to the cost of common equity necessary?

[14] Except as discussed above in regard to U.S. Treasury bond yields as proxies for the long-term risk-free rate.

A. Yes. Liquidity costs arise from the probability and financial consequences of an investor's inability to sell an asset at the desired time at a predictable price. The Electric utility sample comprises market-traded companies whose security prices do not reflect substantial liquidity costs. However, the security prices of small electric utilities, such as Mt. Carmel, typically reflect significant liquidity costs, which are largely due to the lack of a market for the securities of such a company.

Q. How did you estimate the liquidity premium for Mt. Carmel's common equity?

A. A direct assessment of the liquidity premium in the cost of Mt. Carmel's common equity cannot be performed since the cost of common equity to small electric utilities is not directly observable. Thus, I based Mt. Carmel's liquidity premium on the approximately 100 basis point difference between the current 7.96% yield on market-traded, A-rated, long-term utility bonds and the long-term loan rate of 9.00% for the Rural Telephone Finance Cooperative.[15] Therefore, in my judgment, a fair rate of return on common equity for Mt. Carmel equals the cost of common equity range for the Electric utility sample, 10.97% to 11.87%, plus 100 basis points, or 11.97% to 12.87%.

Overall Cost of Capital Recommendation

Q. What are the overall costs of capital for Mt. Carmel?

[15] Moody's Economic Commentary- Moody's Indices and Yield Averages. www.moodys.com/moodys/cust/ecocomm/averages_ecocom.asp. May 21, 2001

A. As shown on Schedule 1.01, Mt. Carmel's overall cost of capital ranges from 10.49% to 11.01% with a recommended midpoint estimate of 10.75%. The midpoint estimate incorporates a cost of common equity of 12.42%.

CAPITAL STRUCTURE

Q. Does capital structure affect the overall cost of capital?

A. Yes. Financial theory suggests capital structure will affect the value of a firm and, therefore, its cost of capital, to the extent it affects the expected level of cash flows that accrue to third parties (i.e., other than debt and stock holders). Employing debt as a source of capital reduces a company's income taxes,[16] thereby reducing the cost of capital; however, as reliance on debt as a source of capital increases, so does the probability of bankruptcy. As bankruptcy becomes more probable, expected payments to attorneys, trustees, accountants and other third parties increase. Simultaneously, the expected value of the income tax shield provided by debt financing declines. Beyond a certain point, a growing dependence on debt as a source of funds increases the overall cost of capital. Therefore, the Commission should not determine the overall rate of return from a utility's actual capital structure if it determines that capital structure adversely affects the overall cost of capital.

[16] The tax advantage debt has over equity at the corporate level is partially offset at the individual investor level. Debt investors receive returns largely in the form of current income (i.e., interest). In contrast, equity investors receive returns in the form of both current income (i.e., dividends) and capital appreciation (i.e., capital gains). Taxes on capital gains are lower than taxes on interest and dividend income because capital gains tax rates are lower and taxes on capital gains are deferred until realized.

An optimal capital structure would minimize the cost of capital and maintain a utility's financial integrity. Unfortunately, determining whether a capital structure is optimal remains problematic because (1) the cost of capital is a continuous function of the capital structure, rendering its precise measurement along each segment of the range of possible capital structures problematic; (2) the optimal capital structure is a function of operating risk, which is dynamic; and (3) the relative costs of the different types of capital vary with dynamic market conditions. Consequently, one should determine whether the capital structure is consistent with the financial strength necessary to access the capital markets under all conditions, and if so, whether the cost of that financial strength is reasonable.

Towards that end, I compared the Company's December 31, 2000 capital structure[17] to industry standards. S&P categorizes debt securities on the basis of the risk that a company will default on its interest or principal payment obligations. The resulting credit rating reflects both the operating and financial risks of a utility.[18] Although no formula exists for determining a credit rating, S&P publishes mean and median values of various financial ratios by credit rating. Electric utilities that share Mt. Carmel's implied A credit rating have a mean total debt ratio of 53.29%.[19] The mean common equity ratio for A-rated electric utilities equals 44.82%. The above numbers are shown in Table 1 below for comparative purposes.

[17] Capital structure taken from the Company's 1998, 1999, and 2000 FERC Form 1.

[18] *Standard & Poor's Utility Financial Statistics*, June 1999, p. 3; *Standard & Poor's Utilities Rating Service: Industry Commentary*, May 20, 1996, p. 1.

[19] *Standard & Poor's Financial Medians Electric Utilities*, www.ratingsdirect.com, July 7, 2000.

TABLE 1: Capital Structure Ratios

	Electric Utilities	Mt. Carmel 2000	Mt. Carmel 1999	Mt. Carmel 1998
Debt ratio	53.29%	32.52%	35.13%	39.50%
Equity ratio	44.82%	67.48%	64.87%	61.21%

Mt. Carmel's 2000 capital structure contains far more common equity than needed to support a financially strong electric delivery services provider. Therefore, I recommend using an imputed capital structure for Mt. Carmel.

Q. What capital structures do you recommend?

A. For Mt. Carmel, I recommend imputing a capital structure consisting of 42.5% long-term debt and 57.5% common equity, as shown on Schedule 1.01.

Q. Why did you use an imputed capital structure for Mt. Carmel?

A. In my opinion, Mt. Carmel's 2000 capital structure, which comprises 32.52% long-term debt and 67.48% common equity, is not an appropriate capital structure upon which to determine a delivery service company's cost of equity. Such a capital structure implies a relatively low level of financial risk. However, the capital structures of S&P's A-rated electric utilities are not nearly so conservative. The mean equity ratio for A-rated electric utilities is only 44.82%, with a standard deviation ("σ") of 9.11%.[20] Thus, Mt. Carmel's 2000 equity ratio is much higher than that of the average A-rated electric utility (approximately 2.5σ above the average). Moreover, most electric companies integrate generation, transmission, and delivery

[20] *Standard & Poor's Financial Medians Electric Utilities*, www.ratingsdirect.com, July 7, 2000.

services. Since S&P regards generating facilities as having a considerably higher level of business risk than delivery services,[21] one would expect an electric delivery services utility to be able to carry a higher percentage of debt on its balance sheet than the average electric utility.

Q. How did you derive Mt. Carmel's imputed capital structure?

The imputed capital structure I used for Mt. Carmel is based on the pre-tax interest coverage ratio for Mt. Carmel and the S&P medians ratio. Mt. Carmel's pre-tax interest coverage ratio is approximately 3.42, which is in the 2.95 to 4.13 range of an A-rated utility. A pre-tax interest coverage within this range will allow Mt. Carmel to maintain its financial strength. I imputed Mt. Carmel's capital structure by adjusting the Company's debt and equity balances using the costs of debt and common equity previously computed and determined that the Company could have 42.5% debt and 57.5% equity and still maintain a pre-tax interest coverage ratio within the A range. The adjusted capital structure results in an implied pre-tax interest coverage of 4.02. Basing the capital structure on Mt. Carmel's implied pre-tax interest coverage takes into consideration the Company's more limited access to debt capital than larger utilities since that limited access is reflected in the interest rate that Mt. Carmel pays. This capital structure is similar to the capital structure accepted in Docket No. 99-0116 (Mt. Carmel's first delivery services proceeding), which was 42.39% debt and 57.61% equity.

[21] Standard & Poor's, *Corporate Ratings Criteria 2000*, page 32.

Q. Does this conclude your direct testimony?

A. Yes, it does.

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Schedule 1.01

Overall Cost of Capital

Capital Component	Capital Structure Ratio*	Cost	Liquidity Premium	Weighted Cost
Long-Term Debt	42.50%	8.50%		3.61%
Common Equity	57.50%	10.97%-11.87%	1.00%	6.88%-7.40%
Total	100%			10.49%-11.01%
			Midpoint Estimate	10.75%

*Imputed Capital Structure

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Schedule 1.02

	Company	Current Dividend $D_{0,1}$	$D_{0,2}$	$D_{0,3}$	$D_{0,4}$	Next Dividend Payment Date	Stock Price
1	Ameren Corp	$0.635	$0.635	$0.635	$ 0.635	6/29/2001	$ 43.3000
2	American Electric Power	0.600	0.600	0.600	0.600	9/7/2001	50.3100
3	CH Energy	0.540	0.540	0.540	0.540	8/1/2001	43.1500
4	Consolidated Edison	0.545	0.550	0.550	0.550	9/14/2001	37.3900
5	FPL Group	0.540	0.540	0.560	0.560	6/15/2001	56.8000
6	IDACORP Inc.	0.465	0.465	0.465	0.465	8/31/2001	40.1000
7	Kansas City Power and Light	0.415	0.415	0.415	0.415	6/20/2001	26.1600
8	NSTAR	0.500	0.515	0.515	0.515	8/1/2001	42.4000
9	Southern Company	0.335	0.335	0.335	0.335	9/6/2001	22.5300

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Expected Quarterly Dividends

Company	$D_{1,1}$	$D_{1,2}$	$D_{1,3}$	$D_{1,4}$
Ameren Corp	$ 0.660	$ 0.660	$ 0.660	$ 0.660
American Electric Power	0.640	0.640	0.640	0.640
CH Energy	0.545	0.545	0.545	0.545
Consolidated Edison	0.550	0.585	0.585	0.585
FPL Group	0.560	0.560	0.600	0.600
IDACORP Inc.	0.498	0.498	0.498	0.498
Kansas City Power and Light	0.439	0.439	0.439	0.439
NSTAR	0.515	0.565	0.565	0.565
Southern Company	0.359	0.359	0.359	0.359

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DCF- Cost of Equity Estimate

	Company	Cost of Equity Estimate
1	Ameren Corp	10.40%
2	American Electric Power	11.94%
3	CH Energy	6.19%
4	Consolidated Edison	12.78%
5	FPL Group	11.40%
6	IDACORP Inc.	12.17%
7	Kansas City Power and Light	12.83%
8	NSTAR	15.26%
9	Southern Company	13.85%
	Average	11.87%

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Growth Rates

	Company	Zacks Earnings	IBES Earnings	Average
1	Ameren Corp	4.40%	3.56%	3.98%
2	American Electric Power	6.05%	7.27%	6.66%
3	CH Energy	-	1.00%	1.00%
4	Consolidated Edison	4.25%	8.51%	6.38%
5	FPL Group	7.27%	6.86%	7.07%
6	IDACORP Inc.	10.00%	4.00%	7.00%
7	Kansas City Power and Light	6.00%	5.33%	5.67%
8	NSTAR	7.50%	11.94%	9.72%
9	Southern Company	5.45%	8.94%	7.20%

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Risk Premium Analysis

Interest Rates as of May 21, 2001

U.S. Treasury Bills[1]		U.S. Treasury Bonds[2]	
Discount Rate	Effective Yield	Bond Equivalent Yield	Effective Yield
3.57%	3.70%	5.57%	5.65%

Risk-Free Rate		Beta		Risk Premium		Cost of Common Equity
5.65%	+	0.54	*	(15.52% - 5.65%)	=	10.97%